

## ABSTRACT OF THE DISCLOSURE

A high bandwidth efficient spread spectrum modulation using chirp waveform. The invention provides a method and apparatus for effecting the high bandwidth efficient spread spectrum modulation using chirp waveform. The method involves reducing the data rate by narrowing the bandwidth or by using a smaller set of orthogonal sequences. The apparatus includes a transmitter and a receiver. The transmitter includes an encoder, an interleaver, a serial to parallel convertor, a baseband modulator that modulates the original bits onto each orthogonal sequence, and IF modulation. The receiver includes a down converter, an analog to digital converter, digital correlators, a synchronizer, a parallel to serial convertor, a deinterleaver, and a decoder.